

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A lockbolt comprising:

a bolt shaft having a locking portion including a plurality of grooves around a surface of the bolt shaft and including a plurality of peaks at least some having a parallelogram shape and being disposed between the grooves; and

a bolt head on a first end of the bolt shaft,

wherein said locking portion is configured to retain a layer of sealant and to squeeze-out excess sealant so as to obtain an adhesive and sealing layer on said surface.

Claim 2 (Currently Amended): The lockbolt according to claim 1, wherein the plurality of grooves ~~extend~~ extends in spiral directions helically around the surface of the bolt shaft.

Claim 3 (Currently Amended): The lockbolt according to claim 1, wherein the plurality of grooves ~~include~~ includes a first group of spiral grooves that respectively extend in a clockwise spiral direction and a second group of spiral grooves that respectively extend in a counterclockwise spiral direction and intersect with said first group of spiral grooves.

Claim 4 (Currently Amended): The lockbolt according to claim 1, wherein the plurality of grooves ~~include~~ includes a plurality of first grooves extending in a circumferential direction of the bolt shaft and a plurality of second grooves extending in a

direction parallel to an axial direction such that the first and second grooves intersect with each other.

Claim 5 (Original): The lockbolt according to claim 1, wherein the parallelogram shape is a diamond parallelogram shape.

Claim 6 (Original): The lockbolt according to claim 1, wherein the parallelogram shape is a pyramid shape with a four-sided base.

Claim 7 (Original): The lockbolt according to claim 1, wherein the parallelogram shape is a square or rectangular shape.

Claim 8 (Currently Amended): The lockbolt according to claim 1, ~~further comprising~~
wherein:

a locking collar is configured to engage with the plurality of peaks of the locking portion.

Claim 9 (Currently Amended): The lockbolt according to claim 8, wherein when the locking collar is engaged with the locking portion, said sealant is ~~uniformly~~ spread out via the plurality of grooves to form ~~a thin surface sealant~~ said adhesive and sealing layer on the ~~locking portion.~~

Claim 10 (Original): The lockbolt according to claim 1, wherein at least one groove opens to an outside at an end of the locking portion.

Claim 11 (Original): The lockbolt according to claim 1, wherein said grooves intersect with each other so that said grooves are interconnected with each other, and wherein at least one of said grooves extends to and opens at an open groove end at an axial end of said locking portion along an axial direction of the bolt shaft.

Claim 12 (Original): The lockbolt according to claim 1, wherein said locking portion excludes all annular circumferential grooves.

Claim 13 (Original): The lockbolt according to claim 1, wherein each of the peaks includes a parallelogram shape.

Claim 14 (Original): The lockbolt according to claim 1, further comprising:
a break-away portion connected to said locking portion.

Claim 15 (Original): The lockbolt according to claim 14, wherein said break-away portion includes a constricted neck encircled by a circumferential continuous groove.

Claim 16 (Currently amended): A lockbolt system comprising:
a bolt shaft,
a bolt head on a first end of the bolt shaft, and
a locking collar,
wherein said a bolt shaft having has means for engaging a the locking collar with the bolt shaft such that the locking collar is securely deformed in a locking manner thereby forcing a sealant to ~~uniformly~~ distribute and form a ~~thin~~ surface sealant layer on the bolt shaft; and squeezing-out excess sealant,

wherein said surface sealant layer forms an adhesive bond between said bolt shaft and said locking collar
~~a bolt head on a first end of the bolt shaft.~~

Claim 17 (Original): The lockbolt system according to claim 16, wherein the means for engaging includes a plurality of grooves around a surface of the bolt shaft and includes a plurality of peaks at least some having a parallelogram shape and being disposed between the grooves.

Claim 18 (Currently amended): The lockbolt system according to claim 17, wherein the plurality of grooves ~~extend~~ extends in spiral directions helically around the surface of the bolt shaft.

Claim 19 (Currently Amended): The lockbolt system according to claim 17, wherein the plurality of grooves ~~include~~ includes a first group of spiral grooves that respectively extend in a clockwise spiral direction and a second group of spiral grooves that respectively extend in a counterclockwise spiral direction and intersect with said first group of spiral grooves.

Claim 20 (Currently Amended): The lockbolt system according to claim 17, wherein the plurality of grooves ~~include~~ includes a plurality of first grooves extending in a circumferential direction of the bolt shaft and a plurality of second grooves extending in a direction parallel to an axial direction such that the first and second grooves intersect with each other

Claim 21 (Original): The lockbolt system according to claim 17, wherein the parallelogram shape is a diamond parallelogram shape.

Claim 22 (Original): The lockbolt system according to claim 17, wherein the parallelogram shape is a pyramid shape with a four-sided base.

Claim 23 (Original): The lockbolt system according to claim 17, wherein the parallelogram shape is a square or rectangular shape.

Claim 24 (Currently Amended): The lockbolt system according to claim 17, wherein when the locking collar is engaged with the locking portion, said sealant is ~~uniformly~~ spread out via the plurality of grooves to form ~~a thin~~ said surface sealant layer ~~on the locking portion of the lockbolt.~~

Claim 25 (Original): The lockbolt system according to claim 17, wherein at least one groove opens to an outside at an end of the bolt shaft.

Claim 26 (Original): The lockbolt system according to claim 17, wherein said grooves intersect each other so that said grooves are interconnected with each other, and wherein at least one of said grooves extends to and opens at an open groove end at an axial end of said locking portion along an axial direction of the bolt shaft.

Claim 27 (Original): The lockbolt system according to claim 17, wherein said locking portion excludes all annular circumferential grooves.

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Claim 28 (Original): The lockbolt system according to claim 17, wherein each of the peaks includes a parallelogram shape.

Claim 29 (Original): The lockbolt system according to claim 17, further comprising:
means for breaking off a break-away portion connected to said locking portion.

Claim 30 (Original): The lockbolt system according to claim 29, wherein the means for breaking includes a constricted neck encircled by a circumferential continuous groove.